

WHAT IS CLAIMED IS:

1. An apparatus for forming a microcrystalline silicon series thin film on a substrate, having a portion in which said substrate is arranged to oppose to an electrode in a vacuum chamber, wherein said apparatus has a plurality of bar shaped electrodes as said electrode which are arranged such that they are perpendicular to a normal line of said substrate and their intervals to said substrate are all different or in part different and a high frequency power source for causing said glow discharge using a high frequency power with an oscillation frequency in a range of from 50 MHz to 550 MHz whereby a glow.
2. An apparatus according to claim 1, wherein said plurality of bar shaped electrodes are arranged such that they are in parallel to each other.
3. An apparatus according to claim 1, wherein said plurality of bar shaped electrodes are arranged such that they are perpendicular to a transportation direction of the substrate.
4. An apparatus according to claim 1, wherein said plurality of bar shaped electrodes are arranged such that their intervals to the substrate are widened in an upper side of a transportation direction of the substrate and narrowed in a down side thereof.
5. An apparatus according to claim 1, wherein said plurality of bar shaped electrodes are arranged such that their intervals to the substrate are periodically changed to a transportation direction of the substrate.